AMENDMENTS TO THE CLAIMS

1.   (Currently Amended) A programmable logic device, comprising:

transceivers;

programmable circuitry coupled to the transceivers; and

memory coupled to the transceivers;

the programmable circuitry configured to receive a frequency locked signal from at least one of the transceivers and to establish a data rate responsive to the frequency locked signal; and

the programmable circuitry programmed to send and receive session information to and from the transceivers to establish a communication session; [[and]]

wherein transceiver attributes are stored in the memory, the transceiver attributes for a plurality of physical links and a plurality of communication protocols; and

wherein the programmable circuitry is coupled to the transceivers with a data input bus and a data output bus.

2.   (Original) The programmable logic device, according to claim 1, wherein the data rate, comprising a low data rate, is used to establish a handshake link, and wherein the programmable circuitry is further configured to establish another higher data rate to use during the communication session.

3.   (Cancelled)

4.   (Previously Presented) The programmable logic device, according to claim 1, wherein the plurality of communication protocols including encoding schemes and link layers.

5.   (Cancelled)

6.   (Previously Presented) The programmable logic device, according to claim 1, wherein the memory, the programmable circuitry and the transceivers are part of a field programmable gate array integrated circuit.

7.   (Cancelled)

8.   (Previously Presented) The programmable logic device, according to claim 1, wherein the programmable circuitry is coupled to the transceivers with a memory bus interface, the programmable circuitry configured to provide transceiver attribute information of the session information to the transceivers via the memory bus interface, the transceivers in response to the transceiver attribute information configured to generate a select signal to select from the transceiver attributes stored in the memory a physical link and a communication protocol for the communication session.

9.   (Original) The programmable logic device, according to claim 8, wherein the physical link and the communication protocol for the communication session are selected from Ethernet, SONET, SDH, ATM, Fiber Channel, PCI Express, and InfiniBand.

10.   (Original) A method for establishing a communication session, comprising:
        programming a programmable logic device for :
                negotiating at least one channel property;
                negotiating at least one encoding scheme; and
                negotiating a protocol link layer;
        setting a data rate responsive to the at least one channel property negotiated;
        selecting transceiver attributes in response to the at least one encoding scheme and the protocol link layer; and
        configuring at least one transceiver in response to the transceiver attributes selected.

11.   (Original) The method, according to claim 10, wherein the channel property is selected from signal swing/bit rate, transmit pre-emphasis, and receive post-equalization.

12.   (Original) The method, according to claim 10, wherein the encoding scheme is for one of Ethernet, SONET, SDH, ATM, Fiber Channel, PCI Express, and InfiniBand.

13.   (Original) The method, according to claim 10, wherein the protocol link layer is for one of Ethernet, SONET, SDH, ATM, Fiber Channel, PCI Express, and InfiniBand.

14.   (Original) The method, according to claim 10, wherein the selecting transceiver attributes is further in response to the at least one channel property.

15.   (Original) The method, according to claim 10, further comprising storing session information associated with the at least one channel property, the at least one encoding scheme and the protocol link layer.

16.   (Original) The method, according to claim 15, further comprising negotiating at least one higher-level function for the protocol link layer negotiated.

17.   (Original) The method, according to claim 10, wherein the negotiating at least one channel property is initiated in response to a query for the communication session to be established for one or more transceivers.

18.   (Original) A method for configuring a line interface having programmable logic circuitry and transceivers, comprising:
    obtaining session information for a first communication session;
    selecting transceiver attributes in response to the session information;
    reading a current configuration of a portion of the transceivers; and
    configuring the portion of the transceivers in response to the transceiver

attributes selected and the current configuration read.

19.   (Original) The method, according to claim 18, wherein the session information comprises at least one channel property, at least one encoding scheme and a protocol link layer.

20.   (Original) The method, according to claim 18, further comprising:

obtaining other session information for a second communication session;

selecting other transceiver attributes in response to the other session information;

reading a current configuration of another portion of the transceivers; and

configuring the other portion of the transceivers in response to the other transceiver attributes selected and the current configuration read for the other portion of the transceivers, the portion and the other portion of the transceivers being configured for different communication sessions.

21.   (Original) The method, according claim 18, wherein the configuring is a partial reconfiguration to provided configured transceivers for a communication session.

22.   (Original) A line interface, comprising:

an integrated circuit board, the integrated circuit board having attached thereto a programmable logic device, the programmable logic device having programmable circuitry and transceivers and having access to memory coupled to the programmable logic device;

the programmable circuitry programmed to establish a communication session by receiving a frequency locked signal from at least one of the transceivers and establishing a data rate responsive to the frequency locked signal; and

the programmable circuitry programmed to send and receive session information to and from the transceivers to establish the communication session, wherein transceiver attributes are stored in the memory, the transceiver attributes for a plurality of physical links and a plurality of communication protocols.

23.   (Original) The programmable logic device, according to claim 22, wherein the programmable circuitry is coupled to the transceivers with a memory bus interface, the programmable circuitry configured to provide transceiver attribute information of the session information to the transceivers via the memory bus interface, the transceivers in response to the transceiver attribute information configured to generate a select signal to select from the transceiver attributes stored in the memory a physical link of the plurality of physical links and a communication protocol of the plurality of communication protocols for the communication session.

24.   (Original) A line interface for establishing a communication session, comprising:

      means for programming a programmable logic device to:

            negotiate at least one channel property;

            negotiate at least one encoding scheme; and

            negotiate a protocol link layer;

      means for setting a data rate responsive to the at least one channel property negotiated;

      means for selecting transceiver attributes in response to the at least one encoding scheme and the protocol link layer; and

      means for configuring at least one transceiver in response to the transceiver attributes selected.